Fig.1

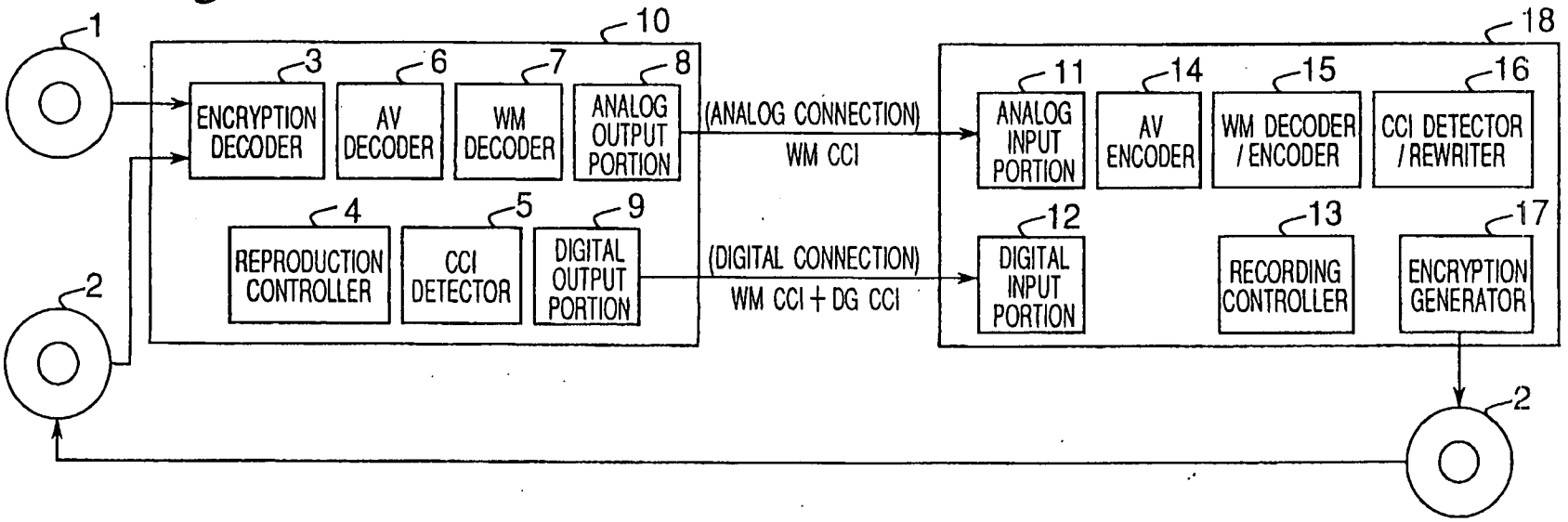
1
2
10
3
ENCRYPTION DECODER
6
AV DECODER
7
WM DECODER
8
ANALOG OUTPUT PORTION
4
REPRODUCTION CONTROLLER
5
CCI DETECTOR
9
DIGITAL OUTPUT PORTION
(ANALOG CONNECTION)
WM CCI
(DIGITAL CONNECTION)
WM CCI + DG CCI
18
11
ANALOG INPUT PORTION
14
AV ENCODER
15
WM DECODER / ENCODER
16
CCI DETECTOR / REWRITER
12
DIGITAL INPUT PORTION
13
RECORDING CONTROLLER
17
ENCRYPTION GENERATOR
2

Fig.2

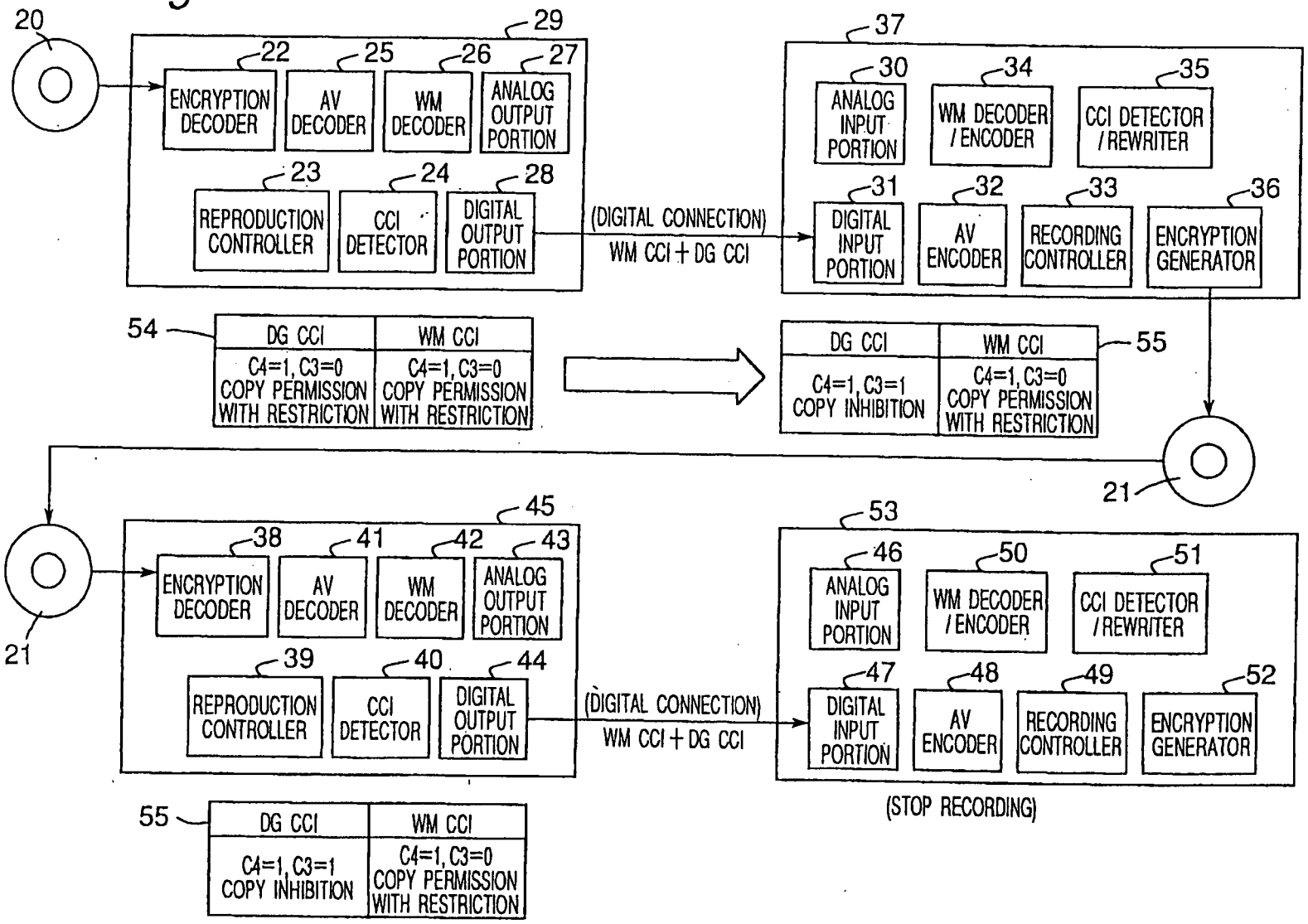
20
29
22
25
26
27
ENCRYPTION DECODER
AV DECODER
WM DECODER
ANALOG OUTPUT PORTION
23
24
28
REPRODUCTION CONTROLLER
CCI DETECTOR
DIGITAL OUTPUT PORTION
(DIGITAL CONNECTION)
WM CCI + DG CCI
37
30
34
35
ANALOG INPUT PORTION
WM DECODER / ENCODER
CCI DETECTOR / REWRITER
31
32
33
36
DIGITAL INPUT PORTION
AV ENCODER
RECORDING CONTROLLER
ENCRYPTION GENERATOR
54
DG CCI
WM CCI
C4=1, C3=0 COPY PERMISSION WITH RESTRICTION
C4=1, C3=0 COPY PERMISSION WITH RESTRICTION
DG CCI
WM CCI
55
C4=1, C3=1 COPY INHIBITION
C4=1, C3=0 COPY PERMISSION WITH RESTRICTION
21
45
38
41
42
43
ENCRYPTION DECODER
AV DECODER
WM DECODER
ANALOG OUTPUT PORTION
39
40
44
REPRODUCTION CONTROLLER
CCI DETECTOR
DIGITAL OUTPUT PORTION
(DIGITAL CONNECTION)
WM CCI + DG CCI
53
46
50
51
ANALOG INPUT PORTION
WM DECODER / ENCODER
CCI DETECTOR / REWRITER
47
48
49
52
DIGITAL INPUT PORTION
AV ENCODER
RECORDING CONTROLLER
ENCRYPTION GENERATOR
(STOP RECORDING)
21
55
DG CCI
WM CCI
C4=1, C3=1 COPY INHIBITION
C4=1, C3=0 COPY PERMISSION WITH RESTRICTION

Fig.3

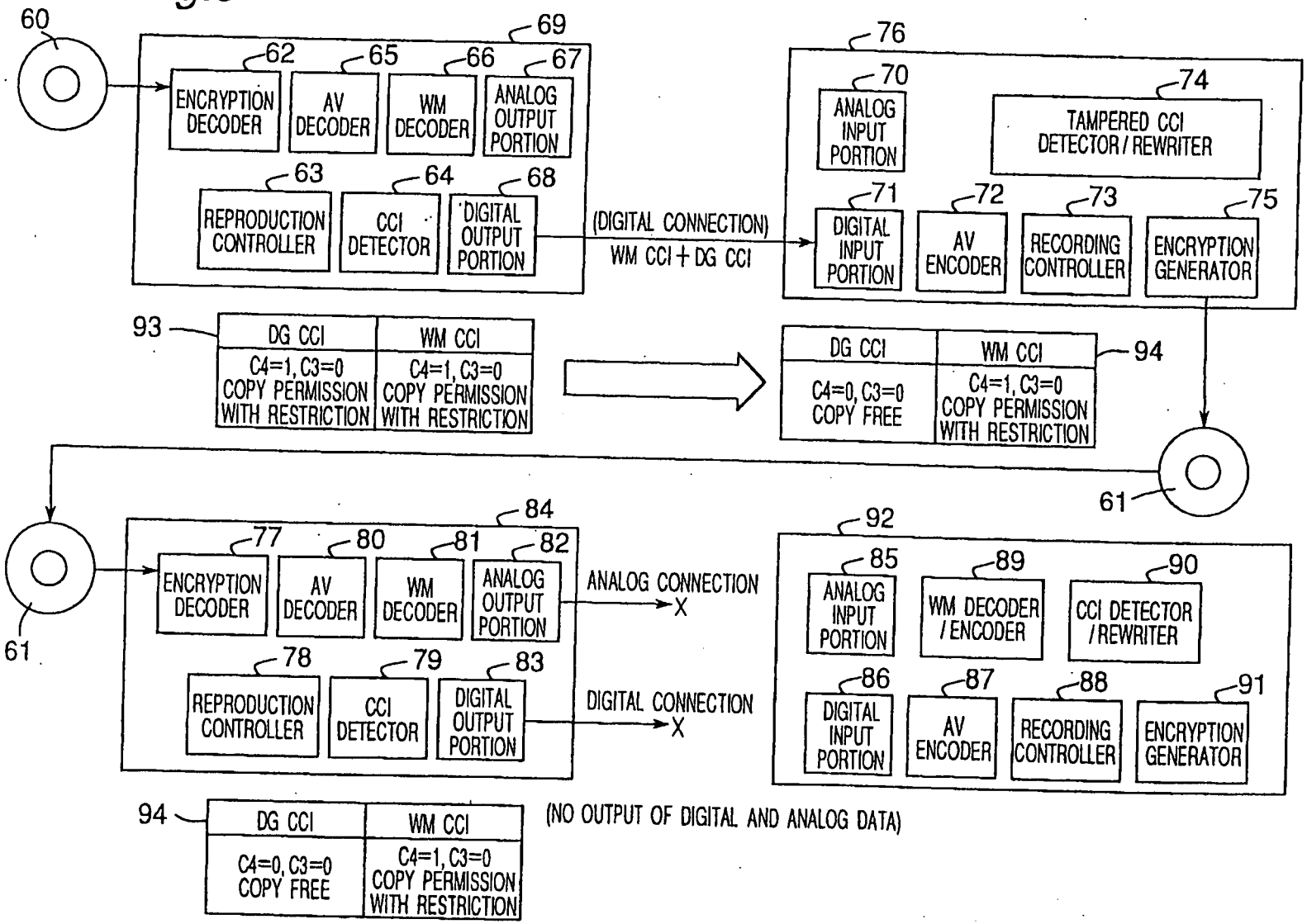
60
69
62
65
66
67
ENCRYPTION DECODER
AV DECODER
WM DECODER
ANALOG OUTPUT PORTION
63
64
68
REPRODUCTION CONTROLLER
CCI DETECTOR
DIGITAL OUTPUT PORTION
(DIGITAL CONNECTION)
WM CCI + DG CCI
76
70
74
ANALOG INPUT PORTION
TAMPERED CCI DETECTOR / REWRITER
71
72
73
75
DIGITAL INPUT PORTION
AV ENCODER
RECORDING CONTROLLER
ENCRYPTION GENERATOR
93
DG CCI
WM CCI
C4=1, C3=0 COPY PERMISSION WITH RESTRICTION
C4=1, C3=0 COPY PERMISSION WITH RESTRICTION
DG CCI
WM CCI
94
C4=0, C3=0 COPY FREE
C4=1, C3=0 COPY PERMISSION WITH RESTRICTION
61
61
84
77
80
81
82
ENCRYPTION DECODER
AV DECODER
WM DECODER
ANALOG OUTPUT PORTION
ANALOG CONNECTION
X
78
79
83
REPRODUCTION CONTROLLER
CCI DETECTOR
DIGITAL OUTPUT PORTION
DIGITAL CONNECTION
X
92
85
89
90
ANALOG INPUT PORTION
WM DECODER / ENCODER
CCI DETECTOR / REWRITER
86
87
88
91
DIGITAL INPUT PORTION
AV ENCODER
RECORDING CONTROLLER
ENCRYPTION GENERATOR
94
DG CCI
WM CCI
C4=0, C3=0 COPY FREE
C4=1, C3=0 COPY PERMISSION WITH RESTRICTION
(NO OUTPUT OF DIGITAL AND ANALOG DATA)

Fig.4

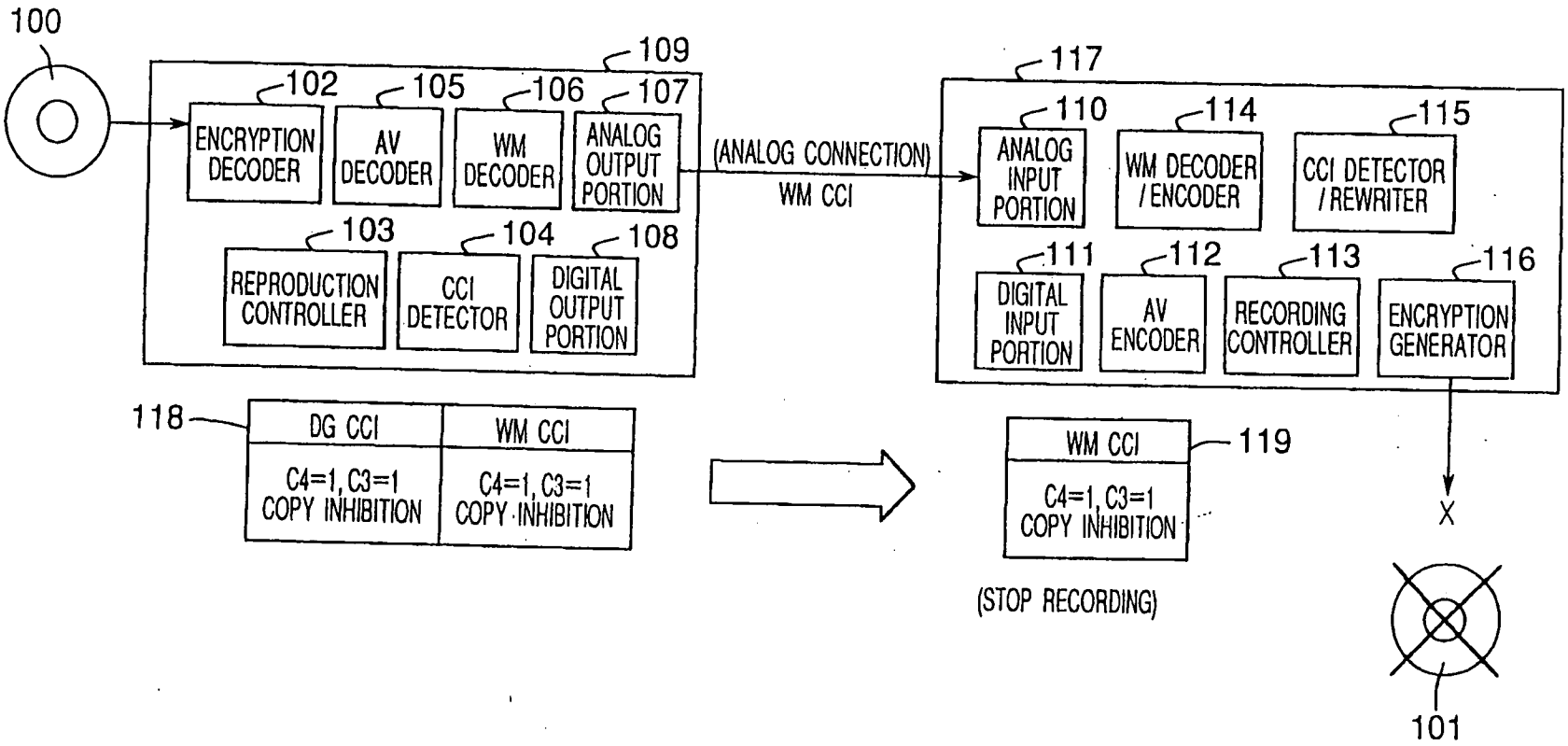
100
109
102
105
106
107
ENCRYPTION DECODER
AV DECODER
WM DECODER
ANALOG OUTPUT PORTION
103
104
108
REPRODUCTION CONTROLLER
CCI DETECTOR
DIGITAL OUTPUT PORTION
(ANALOG CONNECTION)
WM CCI
117
110
114
115
ANALOG INPUT PORTION
WM DECODER /ENCODER
CCI DETECTOR /REWRITER
111
112
113
116
DIGITAL INPUT PORTION
AV ENCODER
RECORDING CONTROLLER
ENCRYPTION GENERATOR
118
DG CCI
WM CCI
C4=1, C3=1 COPY INHIBITION
C4=1, C3=1 COPY INHIBITION
WM CCI
119
C4=1, C3=1 COPY INHIBITION
X
(STOP RECORDING)
101

Fig.5

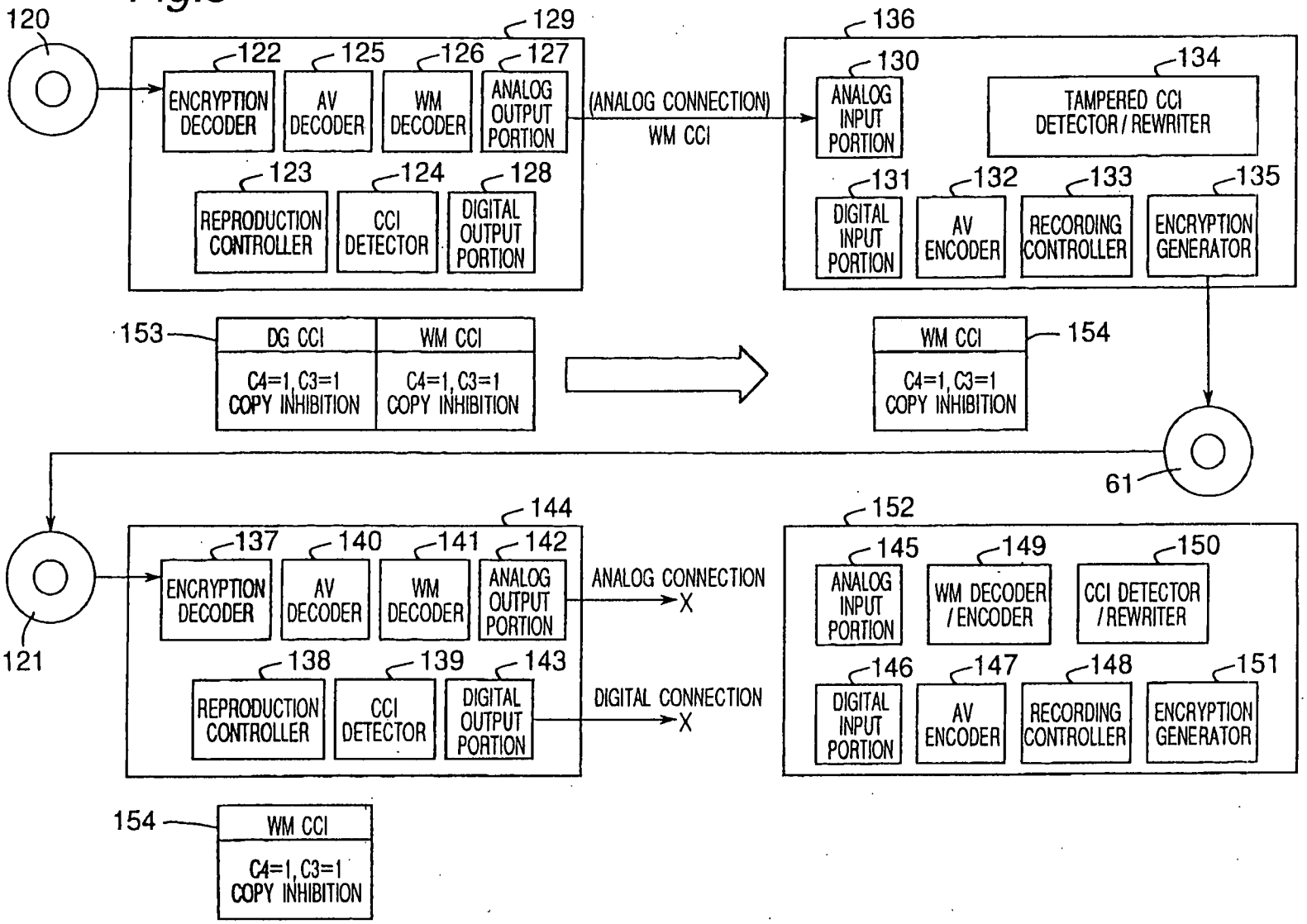
120
129
122
125
126
127
ENCRYPTION DECODER
AV DECODER
WM DECODER
ANALOG OUTPUT PORTION
123
124
128
REPRODUCTION CONTROLLER
CCI DETECTOR
DIGITAL OUTPUT PORTION
(ANALOG CONNECTION)
WM CCI
136
130
134
ANALOG INPUT PORTION
TAMPERED CCI DETECTOR/REWRITER
131
132
133
135
DIGITAL INPUT PORTION
AV ENCODER
RECORDING CONTROLLER
ENCRYPTION GENERATOR
153
DG CCI
WM CCI
C4=1, C3=1 COPY INHIBITION
C4=1, C3=1 COPY INHIBITION
WM CCI
154
C4=1, C3=1 COPY INHIBITION
61
144
137
140
141
142
ENCRYPTION DECODER
AV DECODER
WM DECODER
ANALOG OUTPUT PORTION
ANALOG CONNECTION X
138
139
143
REPRODUCTION CONTROLLER
CCI DETECTOR
DIGITAL OUTPUT PORTION
DIGITAL CONNECTION X
121
152
145
149
150
ANALOG INPUT PORTION
WM DECODER /ENCODER
CCI DETECTOR /REWRITER
146
147
148
151
DIGITAL INPUT PORTION
AV ENCODER
RECORDING CONTROLLER
ENCRYPTION GENERATOR
154
WM CCI
C4=1, C3=1 COPY INHIBITION

Fig.6

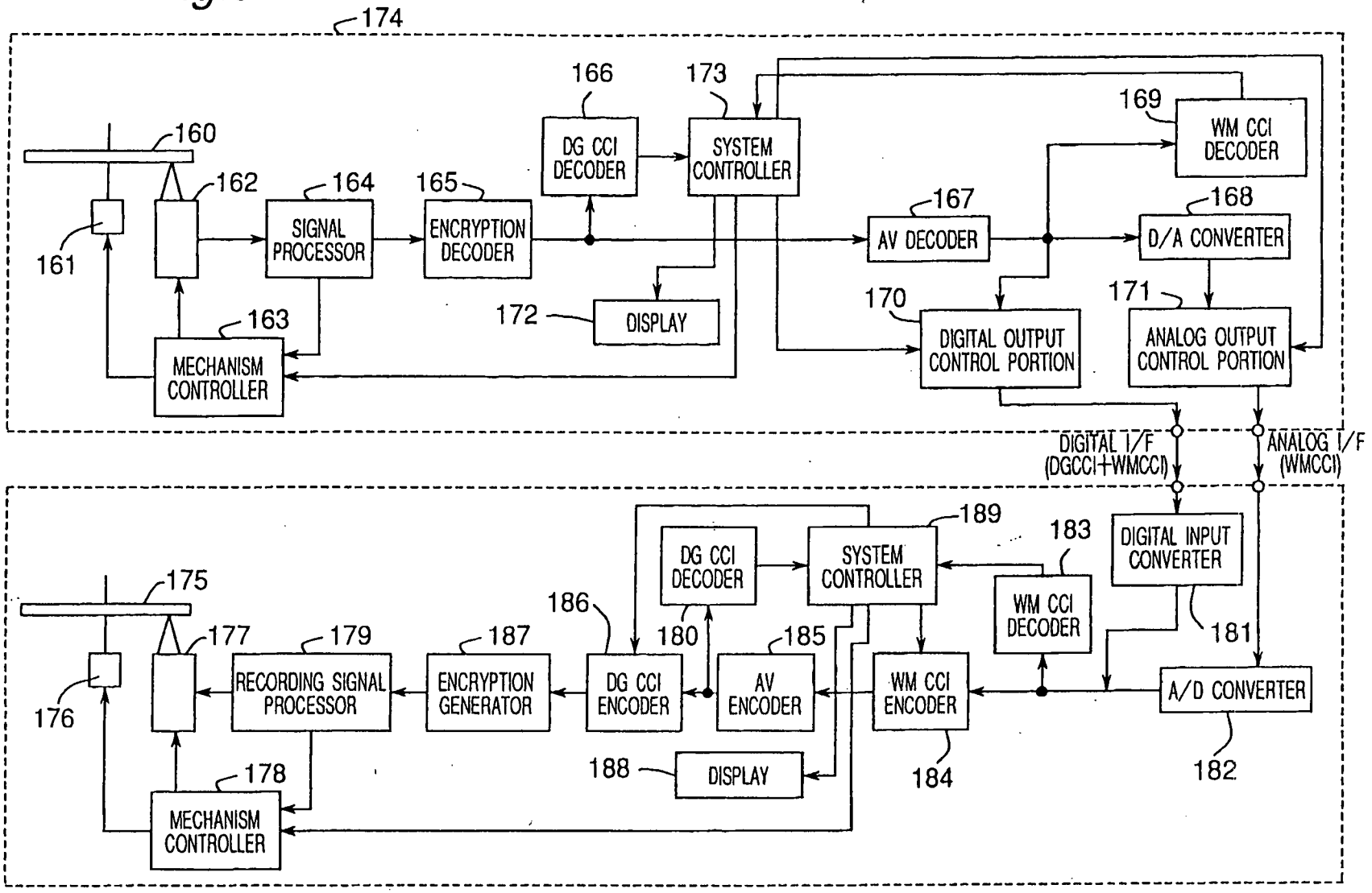
174
160
161
162
163
MECHANISM CONTROLLER
164
SIGNAL PROCESSOR
165
ENCRYPTION DECODER
166
DG CCI DECODER
172
DISPLAY
173
SYSTEM CONTROLLER
167
AV DECODER
169
WM CCI DECODER
168
D/A CONVERTER
170
DIGITAL OUTPUT CONTROL PORTION
171
ANALOG OUTPUT CONTROL PORTION
DIGITAL I/F (DGCCI+WMCCI)
ANALOG I/F (WMCCI)
175
176
177
178
MECHANISM CONTROLLER
179
RECORDING SIGNAL PROCESSOR
187
ENCRYPTION GENERATOR
186
DG CCI ENCODER
180
DG CCI DECODER
185
AV ENCODER
188
DISPLAY
189
SYSTEM CONTROLLER
183
WM CCI DECODER
WM CCI ENCODER
184
DIGITAL INPUT CONVERTER
181
A/D CONVERTER
182

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Fig.7

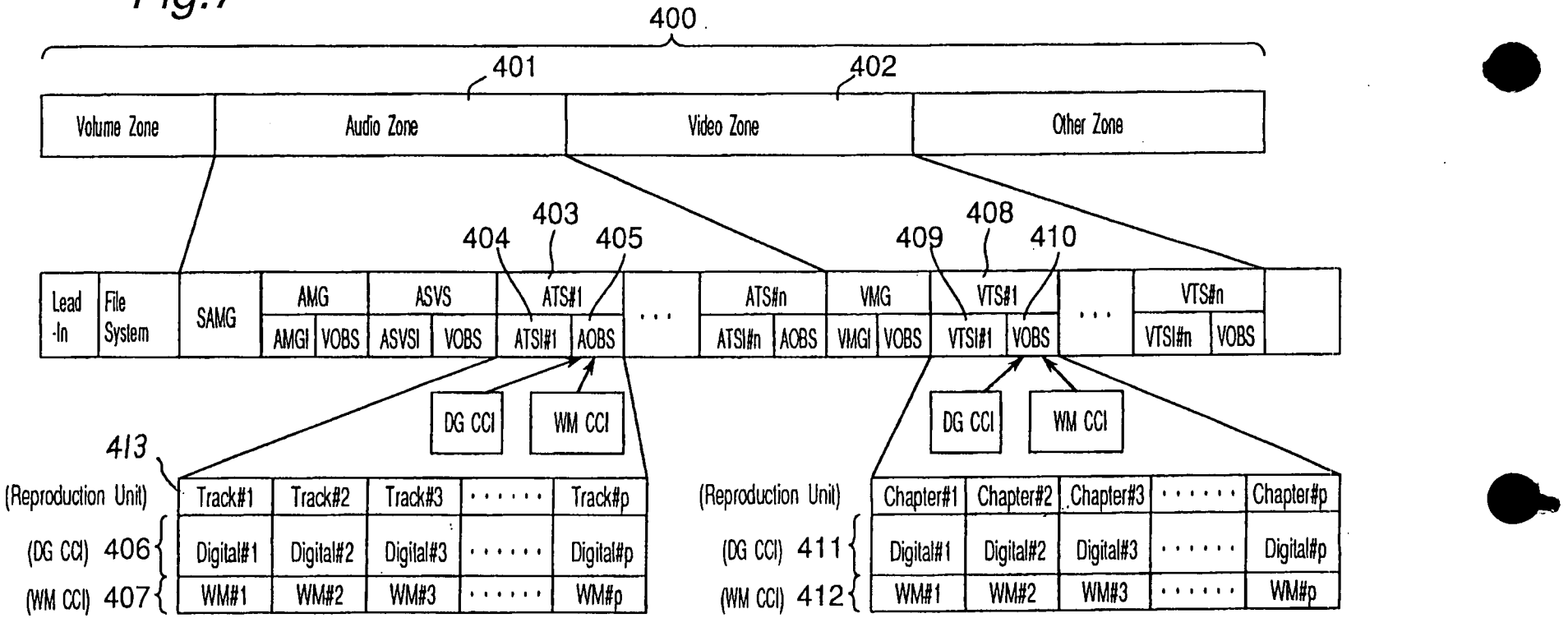

Fig.8

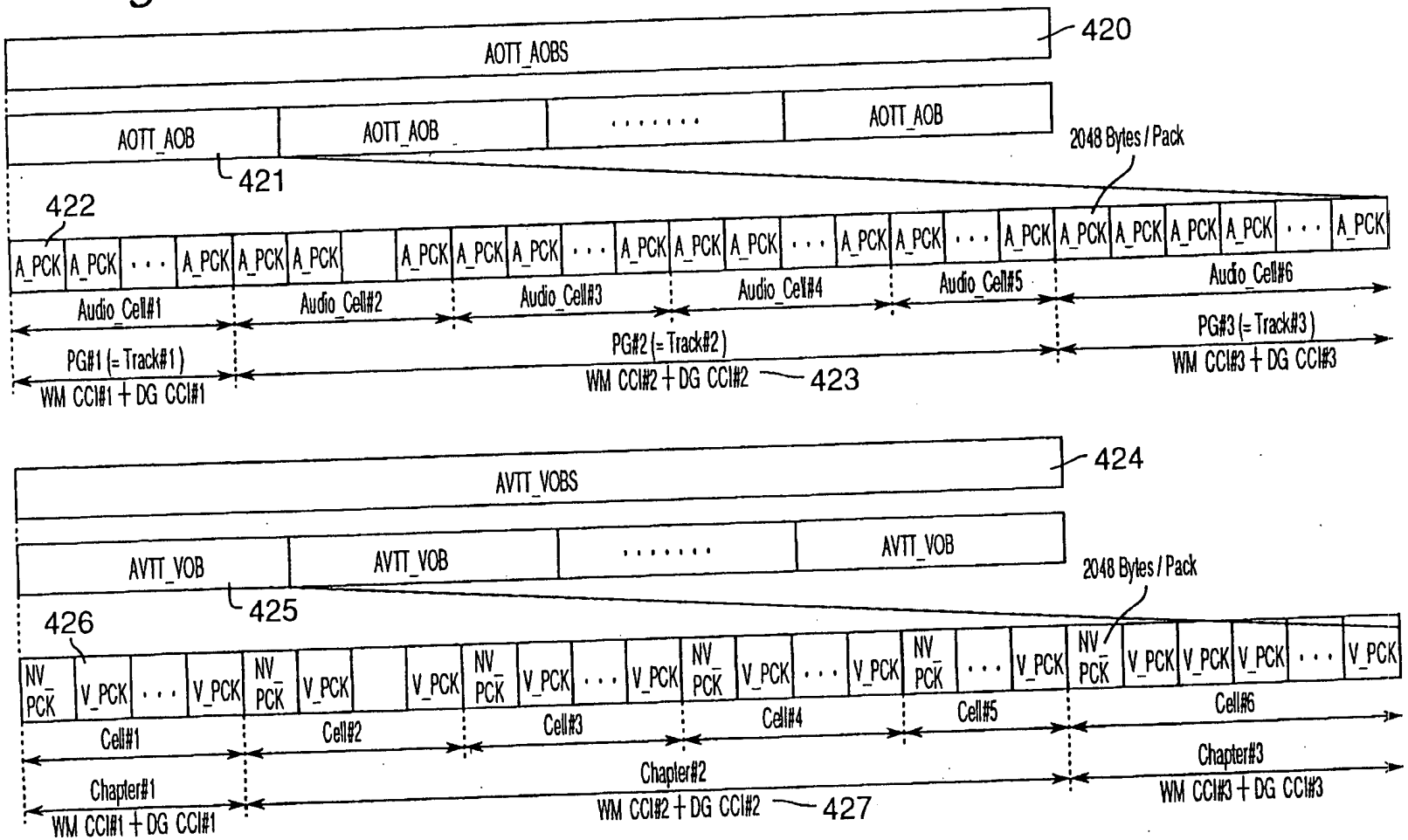
AOTT_AOBS
420
AOTT_AOB
AOTT_AOB
AOTT_AOB
421
2048 Bytes / Pack
422
A_PCK
Audio_Cell#1
Audio_Cell#2
Audio_Cell#3
Audio_Cell#4
Audio_Cell#5
Audio_Cell#6
PG#1 (= Track#1)
WM CCI#1 + DG CCI#1
PG#2 (= Track#2)
WM CCI#2 + DG CCI#2
423
PG#3 (= Track#3)
WM CCI#3 + DG CCI#3
AVTT_VOBS
424
AVTT_VOB
AVTT_VOB
AVTT_VOB
425
2048 Bytes / Pack
426
NV_PCK
V_PCK
Cell#1
Cell#2
Cell#3
Cell#4
Cell#5
Cell#6
Chapter#1
WM CCI#1 + DG CCI#1
Chapter#2
WM CCI#2 + DG CCI#2
427
Chapter#3
WM CCI#3 + DG CCI#3

Fig.9

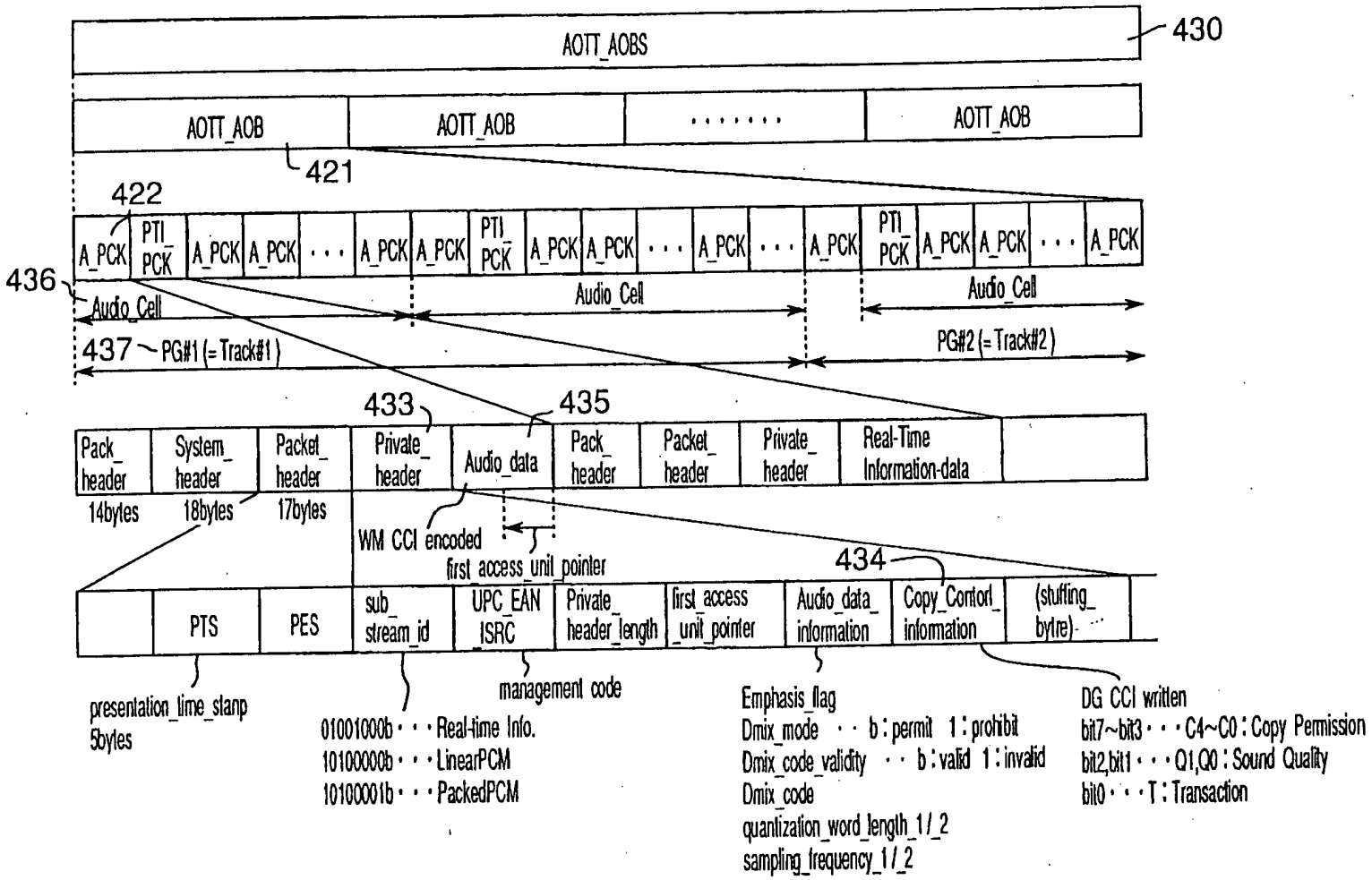
AOTT_AOBS
430
AOTT_AOB
AOTT_AOB
AOTT_AOB
421
422
A_PCK
PTI_PCK
436
Audio_Cell
Audio_Cell
Audio_Cell
437
PG#1 (=Track#1)
PG#2 (=Track#2)
433
435
Pack_header
System_header
Packet_header
Private_header
Audio_data
Pack_header
Packet_header
Private_header
Real-Time Information-data
14bytes
18bytes
17bytes
WM CCI encoded
first_access_unit_pointer
434
PTS
PES
sub_stream_id
UPC_EAN_ISRC
Private_header_length
first_access_unit_pointer
Audio_data_information
Copy_Control_information
(stuffing_byte)
presentation_time_stamp
5bytes
01001000b · · · Real-time Info.
10100000b · · · LinearPCM
10100001b · · · PackedPCM
management code
Emphasis_flag
Dmix_mode · · b : permit 1 : prohibit
Dmix_code_validity · · b : valid 1 : invalid
Dmix_code
quantization_word_length_1/_2
sampling_frequency_1/_2
DG CCI written
bit7~bit3 · · · C4~C0 : Copy Permission
bit2,bit1 · · · Q1,Q0 : Sound Quality
bit0 · · · T : Transaction

Fig.10

COPY CONTROL CONDITION	C PARAMETER					REMARKS
	STATUS		NUMBER OF COPY			
	C4	C3	C2	C1	C0	
COPY FREE	0	0	*	*	*	
COPY WITH RESTRICTION	1	0	0	0	0	n=1
			0	0	1	n=2
			0	1	0	n=4
			0	1	1	n=6
			1	0	0	n=8
			1	0	1	n=10
			1	1	0	n=RESERVED
			1	1	1	n=1 GENERATION COPY PERMISSION
COPY INHIBITION	1	1	*	*	*	

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Fig.11A

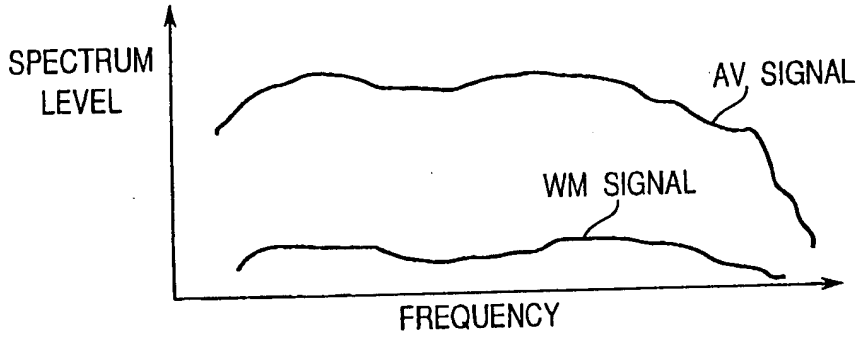

Fig.11B

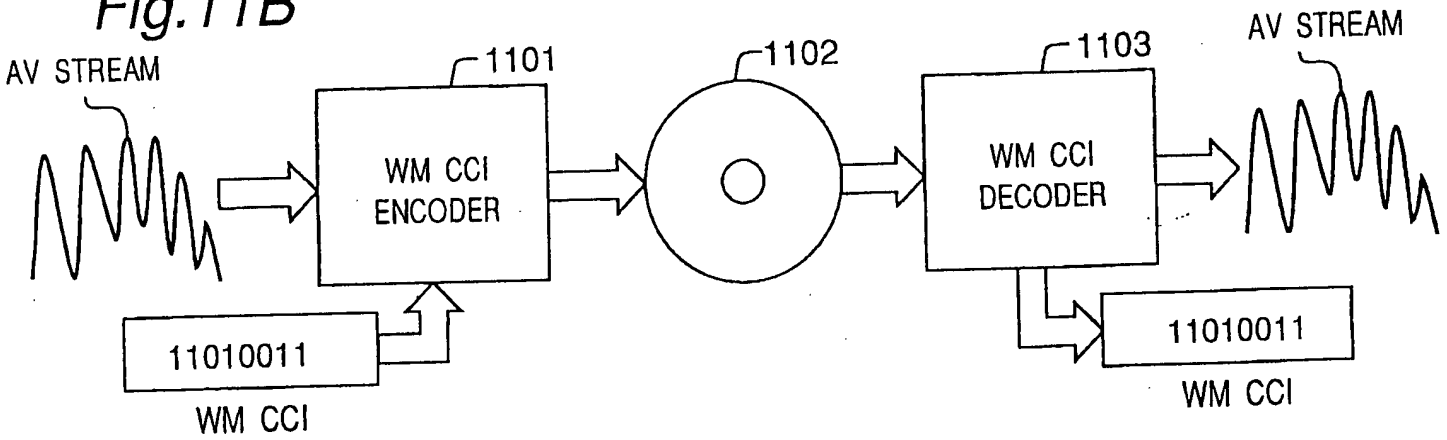

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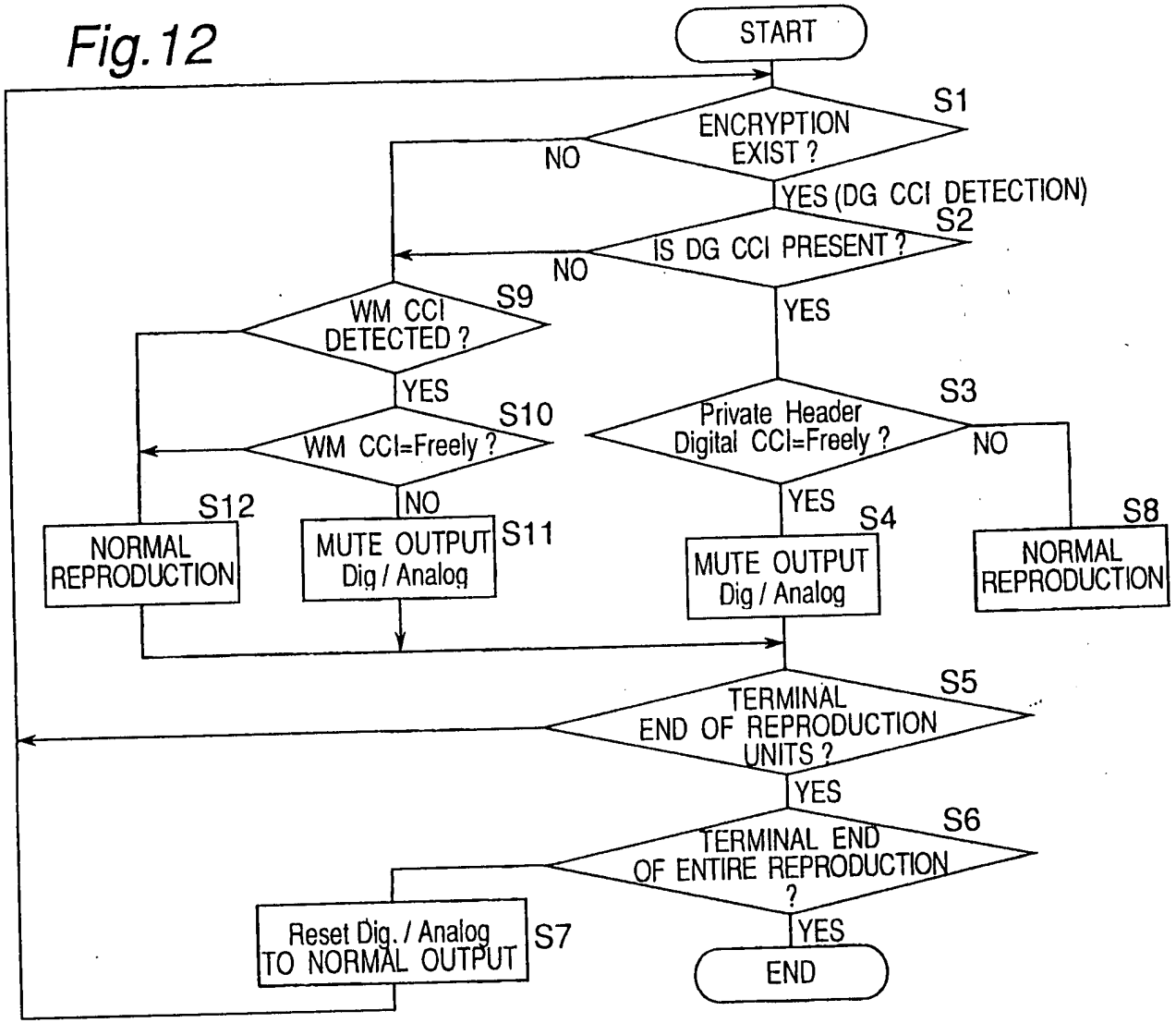
Fig.12



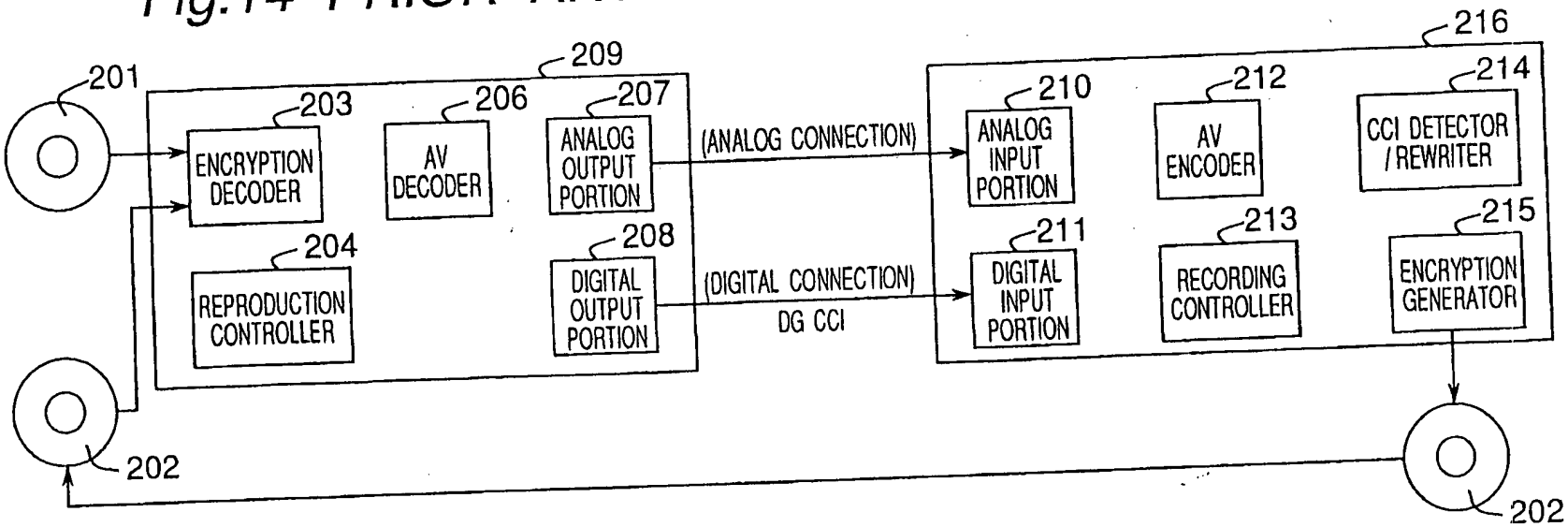
T08020"5688260

Fig.13

COPY CONTROL CONDITION	DG CCI STATUS C4	C3	REPRODUCTION CONTROL	WM CCI STATUS C4	C3	REPRODUCTION CONTROL
COPY FREE	0	0	INHIBITION	0	0	NORMAL
COPY WITH RESTRICTION	1	0	NORMAL	1	0	INHIBITION
COPY INHIBITION	1	1	NORMAL	1	1	INHIBITION

T08020 "5688760

Fig.14 PRIOR ART



TO8020 "5688760

Fig.15 PRIOR ART

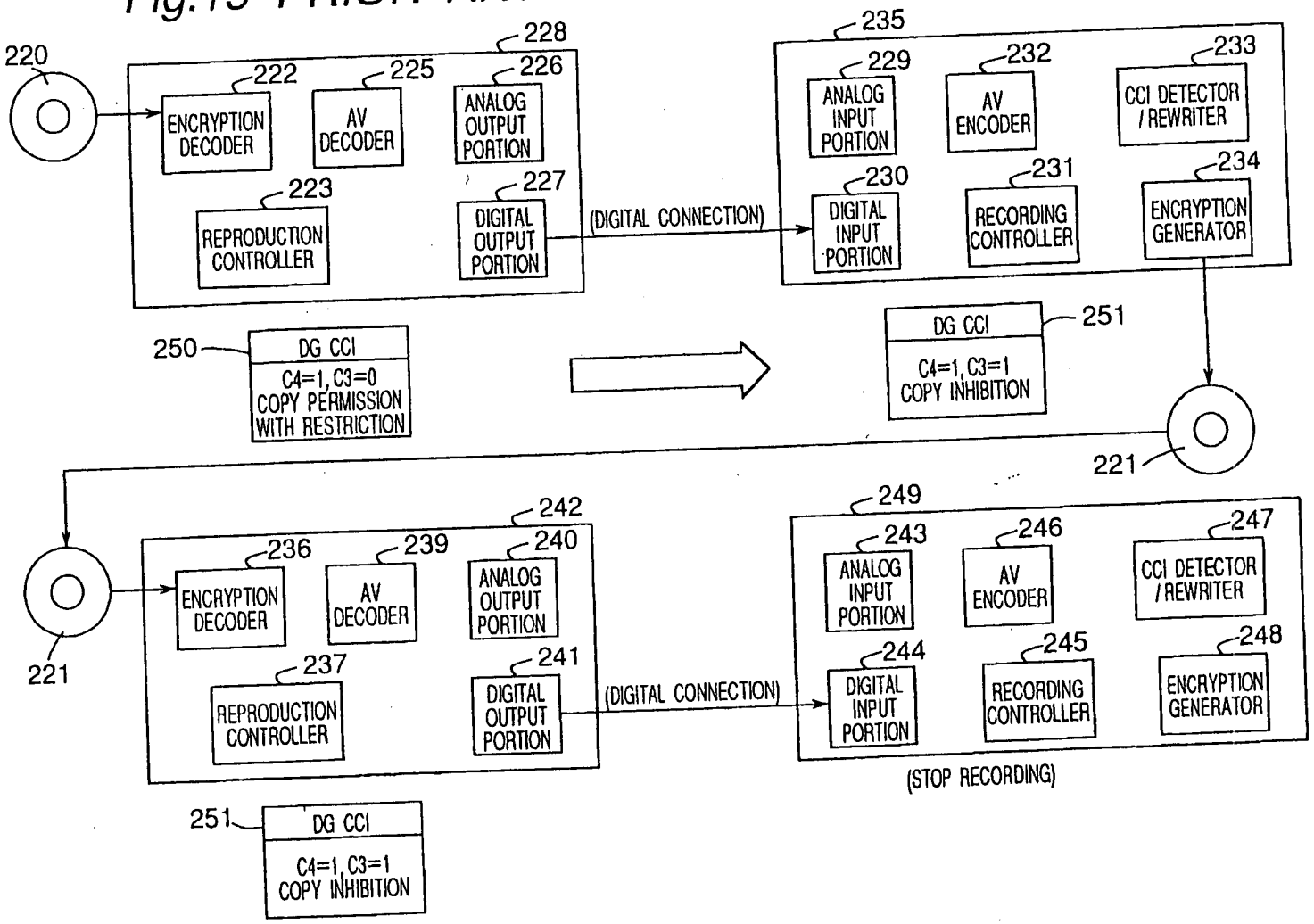


Fig.16 PRIOR ART

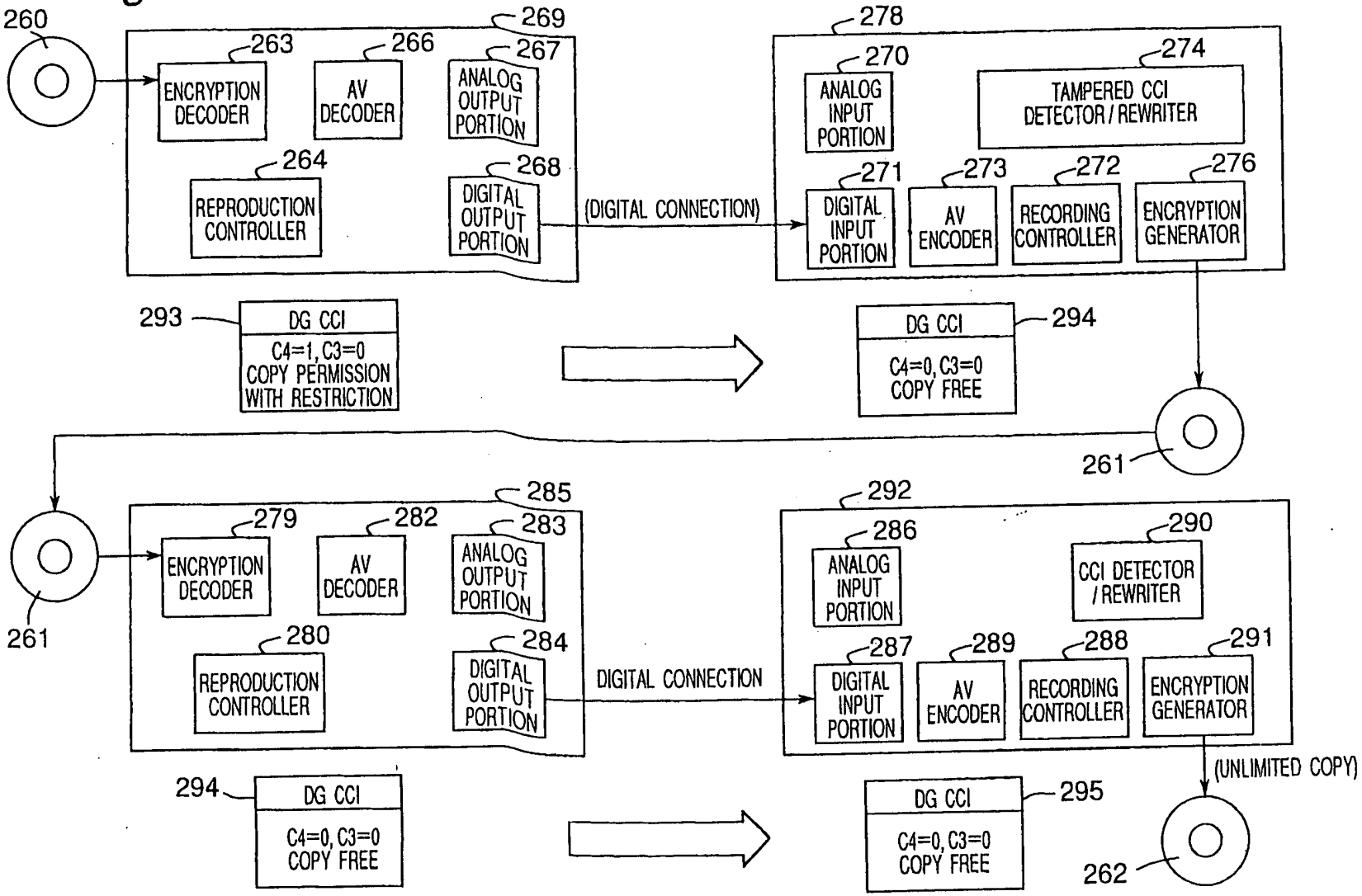


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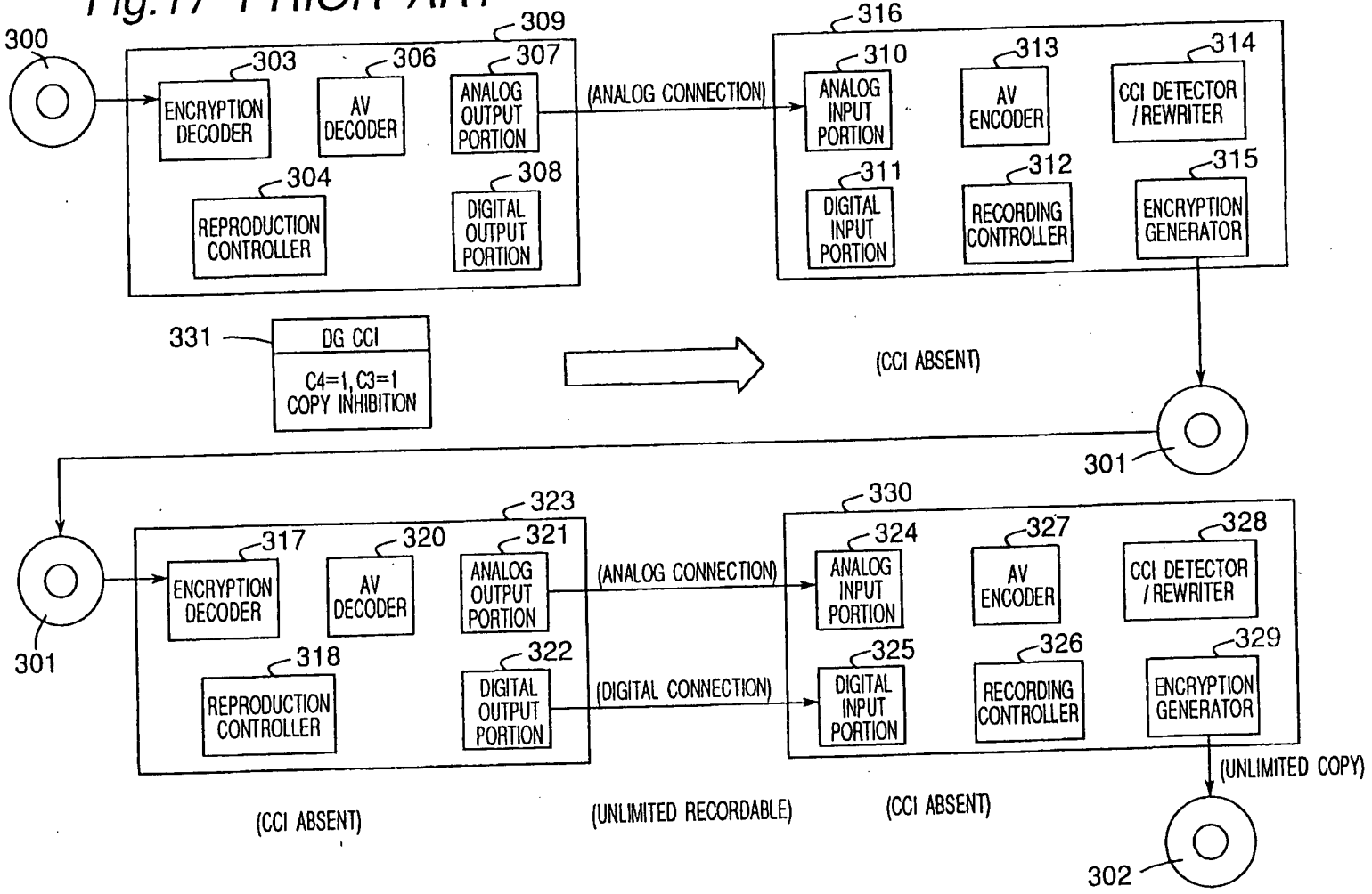
Fig.17 PRIOR ART



T08020"96882760

Fig.18 PRIOR ART

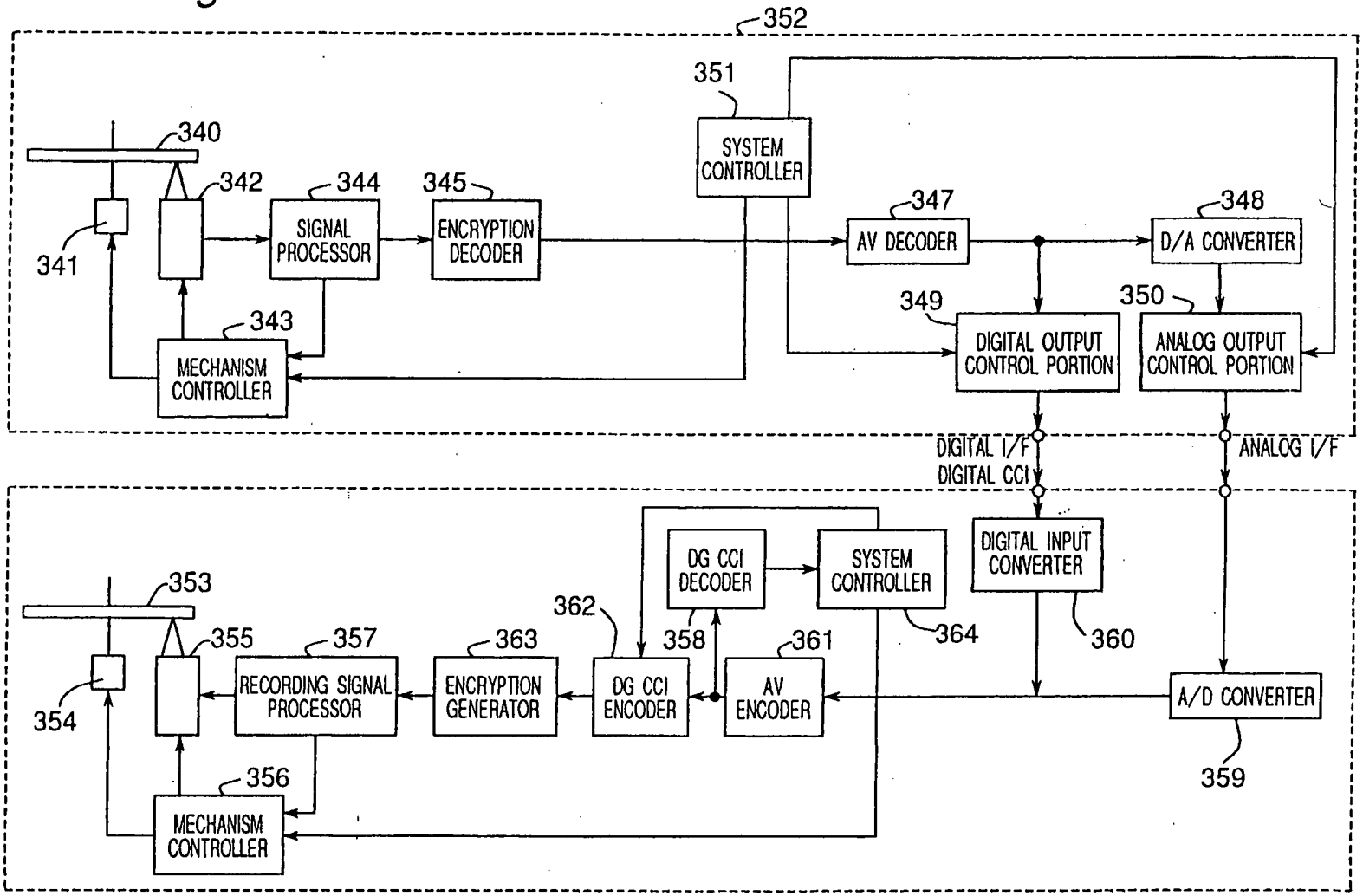


Fig.19 PRIOR ART

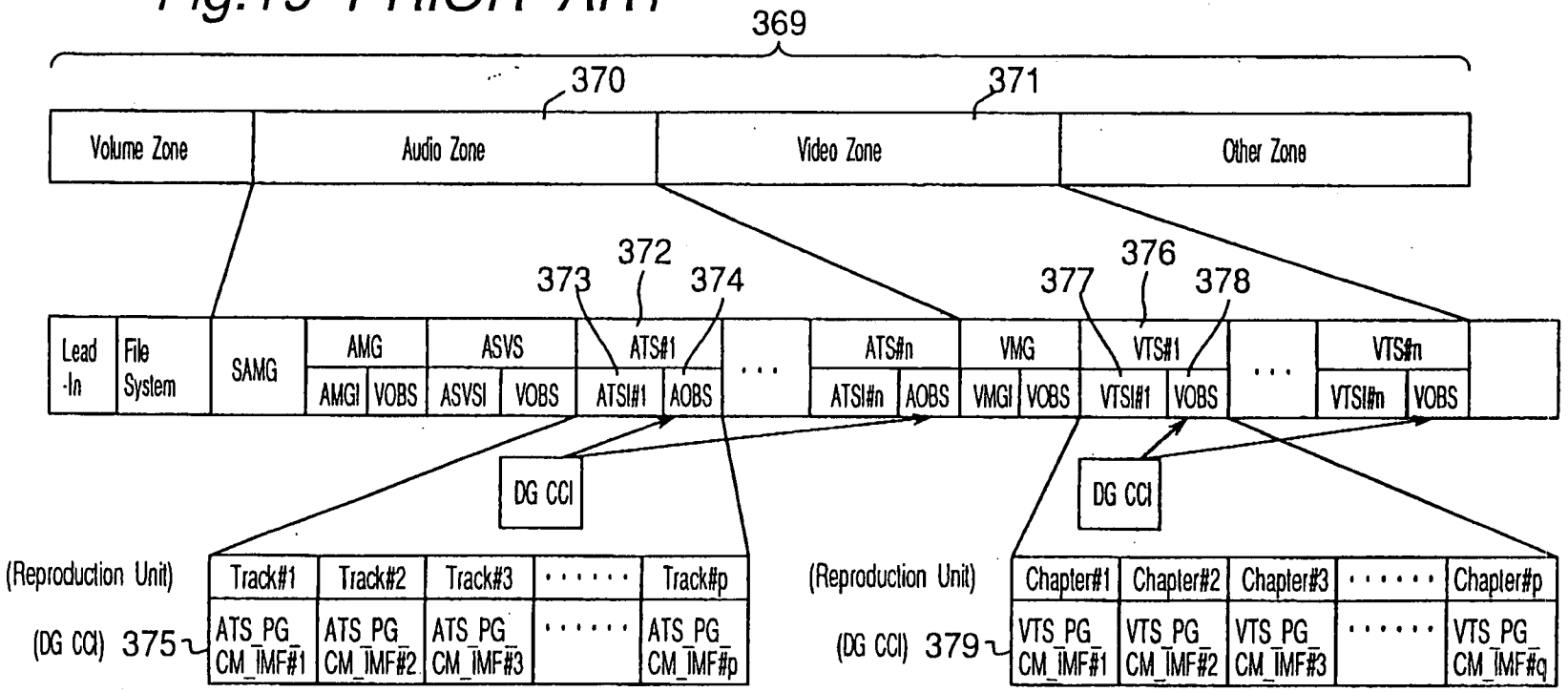
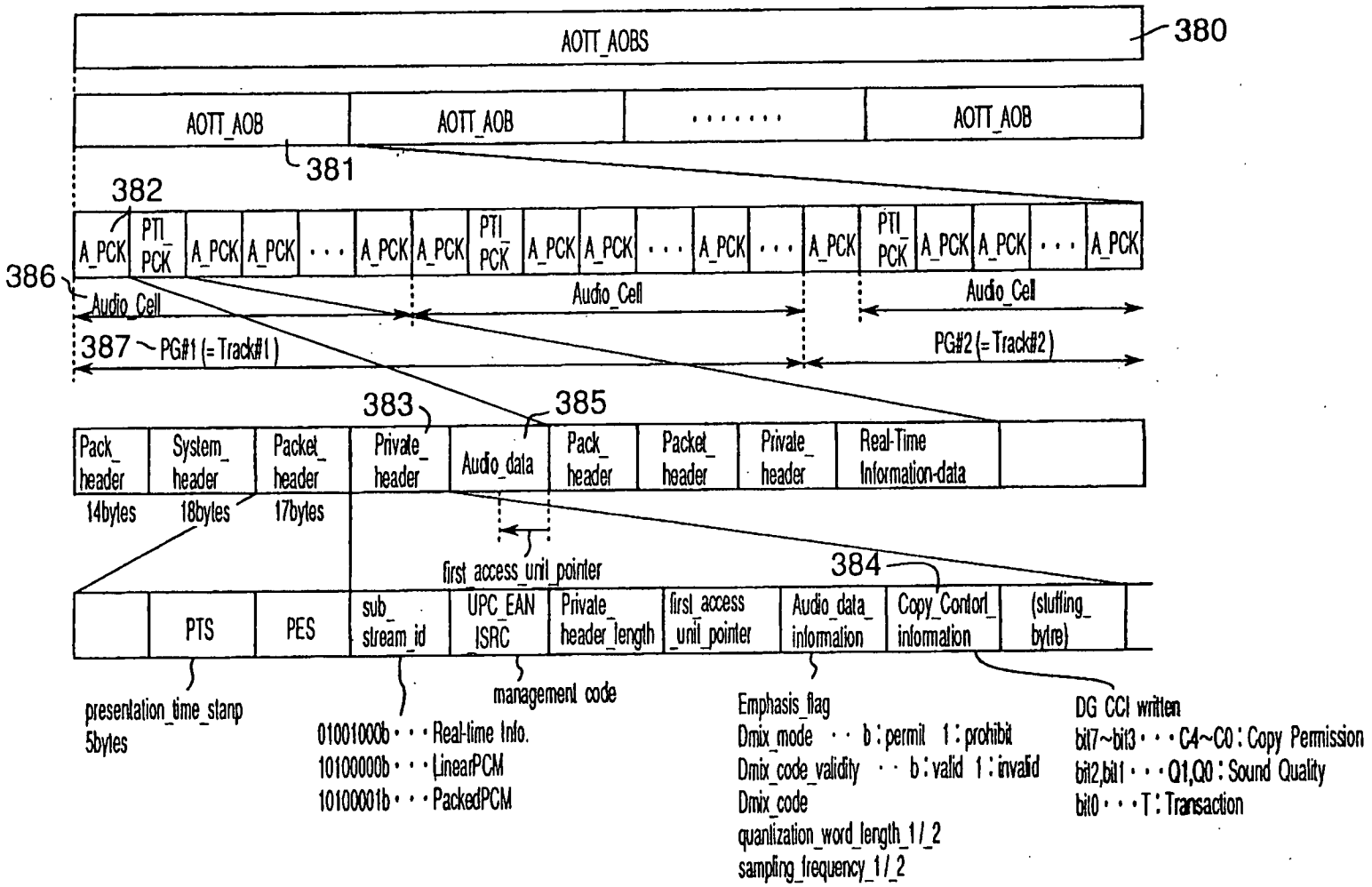



Fig.20 PRIOR ART